

Abstract of the Disclosure

An optical spectrum analyzer for analyzing at least n wavelengths of light is disclosed having a tunable filter with an input port and an output port and a periodic output response with a free spectral range F_{SR} and having a bandwidth B . An AWG is optically coupled to receive light from the output port; and for distributing the light spatially at other locations in a wavelength dependent manner. Optically coupled with the AWG are m detectors for detecting wavelength or channel information. The number of detectors, m is less than n when a single detector is associated with a single channel; and m is less than $2n$ when two detectors are associated with a single channel.